and from this digest we notice there were, during 1905–6, 622 institutions of higher education reporting to the Washington Bureau of Education. The total number of professors and instructors in these institutions reached 23,950, and the number of students 258,603—an increase of 9430 on the preceding year. The value of the property possessed by the 622 institutions amounted to 110,815,400*l.*, of which 49,686,100*l.* was the amount of productive funds. The aggregate income of these institutions for the year was 8,956,700*l.* The total value of all gifts reported amounted to 3,543,300*l.*; Harvard University received 443,600*l.*; Yale University, 229,100*l.*; Columbia University, New York, 210,000*l.*; the University of Pennsylvania, 109,000*l.*; and the North-Western University, Illinois, and Princetown University, New Jersey, each received about 105,000*l.* In this report, for the first time, the number of students in schools of technology is not given separately, because, as the commissioner points out, there has been an erroneous opinion in Europe and elsewhere that there is no higher technical training in America outside the schools of technology, whereas the ordinary universities grant nearly twice as many degrees in science as the technical colleges, and are doing excellent work in pure and applied science generally.

WE have received a couple of pamphlets (Leipzig: Verlag der Durr'schen Buchhandlung) which indicate the continued interest of the German public in both sides of the question of school reform. One of these pamphlets ("Die Stadt Berlin und das Reformgymnasium") is a reprint of a strenuous argument, which was originally delivered by Stadtschulrat Dr. Carl Michaelis in 1904, against tampering with the school system of the capital. Dr. Michaelis has brought the statistical portion of his address up to date, and finds in recent educational history nothing to weaken his former contention that the establishment of a Reformgymnasium in Berlin is demanded neither by the success of the reform movement generally nor by the specific educational conditions of the city. Further, while he makes it clear that he is far from opposed to well-considered changes in other directions, he defends the old gymnasium against the reformers as an indispensable part of the school system. In particular, he criticises the contention that the lower classes should be preparatory equally to all the recognised forms of secondary school, partly on the ground that the advantage which this arrangement is alleged to give the parent in selecting the school suitable to the abilities of his child is illusory, partly on the ground that no plan devised on these lines can accord with the necessary conception of a gymnasial education. Many of these arguments appear also in the second pamphlet ("Mathematik und Reformgymnasium"), in which Dr. H. Vogt endeavours to show that the teaching of mathematics suffers in respect both of the time given to the subject and of the value of the instruction where it is attempted to superimpose the gymnasial classes upon a foundation common to all the higher schools. The same firm of publishers has reprinted the address delivered in the University of Erlangen by Dr. Richard Falckenberg on the occasion of the centenary of the death of Kant (February 12, 1904).

THE second annual report, dealing with the year 1907, of the president and treasurer of the Carnegie Foundation for the Advancement of Teaching has reached us. It will be remembered that Mr. Carnegie's gift of two million pounds sterling was intended to serve primarily in the establishment of retiring allowances for teachers in the institutions of higher learning in the United States, Canada, and Newfoundland, but that he left it to be administered for this purpose in such a manner as the trustees might decide to be wise. The fears expressed in some quarters that such a gift in the hands of a limited number of men might prove a centralised power which would hinder rather than aid the progress of education do not seem to have been well founded. Since the inauguration of the foundation down to September 30 last, grants have been made to 166 persons (eighteen of whom died during the period), involving an annual budget of 46,032*l.* Of this amount, 20,230*l.* was devoted to retiring allowances in accepted institutions, and 17,702*l.* to retiring allowances made to individuals. In the group of retirements on the basis of age an interesting comparison is made; the number of allowances granted on this basis to professors not in accepted institutions before October, 1906, was eighteen; since then only eight similar allowances have been made. This indicates that the number of aged professors whom on account of their distinguished merit alone the trustees would be likely to add to the holders of allowances is rapidly diminishing. It is also interesting to note that retiring allowances to professors in State universities are made only when the services rendered to learning by the applicant have been of great distinction. As indicative of the number of applications made to the trustees, it may be stated that the files of the foundation show that 500 applications have been refused. It is satisfactory to learn that when once the principles of award have been decided upon finally, the trustees will see that the retiring allowance comes to the recipient "as a right, not as a charity; as a thing earned in the regular course of service, not a courtesy."

SOCIETIES AND ACADEMIES.

LONDON.

Physical Society, February 14.—Prof. J. Perry, F.R.S., president, in the chair.—Annual general meeting. Address by the newly elected president, Dr. C. **Chree.** Dr. Chree referred to the magnetic results obtained by the National Antarctic Expedition of 1901–4. The expedition was furnished with magnetographs, and the reduction and discussion of the curves has been done by the National Physical Laboratory. Before describing the results, the president spoke of the nature of the preparations that might be made in any future national scientific expedition. The observers should have a preliminary training lasting over some months, and should be practised in the use of instruments. These instruments ought to be ready for use and fully tested months before the date of the expedition. A programme should be got out in good time, so as to admit of rehearsals by the observers. An inquiry, after the return of the expedition, into the value of the results obtained might be useful in securing that meritorious work in science would not be overlooked. Lantern-slides relating to the diurnal inequalities of the magnetic elements in the Antarctic were exhibited and described. Slides of corresponding Kew results were shown for intercomparison. The president dwelt on the relatively highly disturbed nature of the Antarctic records. In the Antarctic, the declination and horizontal force magnets were practically never at rest. So large and incessant were the disturbances that no idea of the nature of the regular diurnal inequality was obtainable from inspection of individual curves. Diurnal inequalities, however, derived from the curves of single months, and still more of a whole season of the year, proved to be of a comparatively smooth character.

Royal Meteorological Society, February 19.—Dr. H. R. Mill, president, in the chair.—The formation of "snow rollers" observed at Ryton on Dunsmore, near Coventry, on January 29–30, 1907: C. **Browett.** It seems that the flakes of a light fluffy layer of surface snow are made adhesive by a rise in the temperature of the air above the freezing point, while the under snow remains cold and dry, and the particles of damp surface snow are enabled to adhere to each other, but not to the dry under snow. A strong wind may then push over little projections of the surface snow and start them rolling, when, of course, they will travel and grow until the resistances overcome the propelling power of the wind. These "snow rollers" vary in size, some being only a few inches in diameter, while at times others have been seen 2 feet or more in length.—Comparison of ships' barometer readings with those deduced from land observations: E. **Gold.** This paper contained the result of a preliminary investigation undertaken at the Meteorological Office into the relation between the barometer readings taken on ships during their passage across a line between Falmouth and Brest, and the readings deduced for the ships' positions from the observations at these places and the trend of the isobars, on the assumption of regular pressure changes. Taking into account the various causes which can appreciably influence the height of the barometer on board ship, it appears that until the two chief ones—the wind and the vertical acceleration effects—are eliminated, it will be impossible to draw any satisfactory conclusions regarding the relative values of atmospheric pressure over sea and land. It can be said in general that there appears to be a tendency for the barometric pressure to be lower between Falmouth and Brest than would be expected from the land observations.

Geological Society, February 19.—Sir Archibald Geikie, K.C.B., Sec.R.S., president, in the chair.—The two earth-movements of Colonsay: W. B. **Wright**. The supposed Torridonian rocks of Colonsay exhibit in their folding and cleavage the effects of two movements analogous in their results to those proved by Mr. Clough in the Cowal district of Argyll. Not only the planes of the first or slaty cleavage, but also the quartz veins formed along them, have been folded by the second movement, and may be observed to be crossed at considerable angles by the cleavage produced during this second movement. An extensive series of lamprophyre dykes, obviously later than the first cleavage, are found to be folded and cleaved by the second movement. Moreover, some of these dykes traverse and are chilled against a mass of syenite, which can also be proved to be later than the first cleavage. The distinctness of these two movements is, therefore, considered to be completely established. The second cleavage being of the nature of strain-slip, its development along the axial planes of the folds is of interest, and is briefly discussed.—Notes on the River Wey: H. **Bury**. The part of the River Wey within the Wealden area is divided into six sections:—(1) the consequent river cutting the Chalk at Guildford; (2) the subsequent stream coming in from the east at Shalford; (3) the western subsequent stream parallel to the Hog's Back; (4) the continuation of the last westward (the Tilford River), rising at Selborne and receiving many tributaries, including the Headley River, from between Blackdown and Hindhead; (5) the short obsequent section from Farnham to Tilford (the Waverley River); and (6) the portion above Farnham coming from Alton and beyond (the Farnham River). Part i. deals with the relation of sections (6), (5), and (4) to the Blackwater; part ii. with the Palæolithic Gravels of Farnham; and part iii. with the Farnham branch of the Wey and the Alton district, which is remarkable in that there is a complicated series of Chalk valleys, which spread over some fifty square miles of country and discharge their waters into the Wealden area.

Royal Microscopical Society, February 19.—Mr. A. N. Disney in the chair.—An improved type of mercury vapour lamp for use with the microscope: J. E. **Barnard**.—Eye-pieces for the microscope: Mr. **Nelson**.—Results of observations, extending over a period of four years, on a rare protophyte: Rev. E. **Tozer**.—Dimorphism in the recent foraminifer *Alveolina boscii*: F. **Chapman**.—*Biddulphia mobiliensis*: Mr. **Nelson**. The author described some exceedingly minute secondary markings in the primary areolations of this diatom, discovered by him.

Faraday Society, February 25.—Dr. T. M. Lowry in the chair.—Hydrolysis as illustrated by heats of neutralisation: V. H. **Veley**. It is pointed out that a correlation of hydrolysis values and basic constants deduced therefrom with those of heats of neutralisation presents important issues. Determinations by an accurate method at different temperatures are required to test the validity of Nernst equation $Q = RT^2\epsilon\frac{d \log^{10} K}{dt}$. Relationships of a general character are discussed for the hydrochlorides of nitrogen bases, also of certain sodium salts of phenols and organic acids. The effect on thermoneutrality and basic constants by the introduction of a second amino-grouping is considered. Finally, it is pointed out that determinations are required of hydrolysis values at considerable dilution of certain metallic chlorides.—A study of the sulphur anion and of complex sulphur anions: Joseph **Knox**. The solubility of HgS, red and black, in Na_2S, K_2S, and BaS solutions has been determined, and has been found to depend on the formation of the complex anion HgS''. By its greater solubility in these solutions the black modification of HgS has been shown to be the less stable form. The constant for the formation of the complex anion from the ions $Hg^{\cdot\cdot}$ and S'' is

$$k = \frac{[HgS_2'']}{[Hg^{\cdot\cdot}][S'']^2} = 5{\cdot}1 \times 10^{54}.$$

From saturated solutions of Na_2S and HgS a crystalline double sulphide of sodium and mercury, $2NaS,5HgS,3H_2O$, has been isolated. From the study of the complex formation between HgS and Na_2S it is concluded that Na_2S is almost completely hydrolysed into NaOH and NaSH.

Royal Anthropological Institute, February 25.—Mr. A. L. Lewis in the chair.—Montenegrin manners and customs: M. Edith **Durham**. An account was given of the people's beliefs in spirits and fabulous serpents, with their marriage arrangements and funeral ceremonies. All cousins, to whatever degree, are considered as blood relations, and marriage between them is prohibited, and it is interesting to note that godfatherhood is also a recognised relationship, a godson becoming of blood kin to all his godfather's relations.

Cambridge.

Philosophical Society, January 27.—Dr. Hobson, president, in the chair.—(1) Exhibition and description of a portion of a fossil jaw of one of the Equidæ (British East Africa); (2) exhibition of zebra skins (thirteen) and skulls (four) from British East Africa, with special reference to the problem of the centre of distribution of the three species of zebras: Prof. **Ridgeway**.—A new genus of Ixodoidea, together with a description of eleven new species of ticks: Prof. **Nuttall** and C. **Warburton**.—(1) Report on the brain of a microcephalous idiot; (2) description of a microcephalous new-born pig: Dr. **Duckworth**.

February 10.—Mr. S. Ruhemann, vice-president, in the chair.—The nature of γ rays: Prof. J. J. **Thomson**. The author supported the view that the γ rays have a structure similar to that ascribed to the Röntgen rays in his "Discharge of Electricity through Gases," consisting of small pulses of electric force, the pulses having a very small area as well as being very thin. These pulses form a system made up of separate units, which may be at considerable distances from each other. Each of the units possesses mass, momentum, and energy. It was shown that all the properties of the γ rays could be explained on this view without the introduction of the somewhat far-fetched hypotheses which are necessary if the view that the γ rays are combinations of positive and negative ions is adopted.—The velocity of kathodic secondary radiation: Prof. J. J. **Thomson**. A method of measuring the velocity of secondary kathode rays from gases was described, and by the use of this method it was shown that the maximum velocity of the secondary rays is independent of that of the primary rays. Cases were described in which the velocity of the secondary rays was greater than that of the primary rays from which they originated, showing that the secondary rays result from a kind of explosion of the atoms of the gas through which the primary rays pass.—The spectrum of the discharge from a glowing lime kathode in mercury vapour: F. **Horton**. The discharge tube used had a kathode consisting of a strip of platinum foil covered with lime or a mixture of lime and baryta. This could be heated by means of an electric current. The anode was either aluminium, platinum, or mercury. The spectrum showed the lines of the residual gas and those of mercury. On pumping out the residual gas its spectrum gradually disappeared and the mercury spectrum increased in brilliancy, and, at the same time, three new lines appeared in the orange and two new lines in the red. These lines were quite sharp and bright, and are not given in the ordinary tables of mercury lines. Experiments showed that these lines were not due to calcium or barium, but were connected with the presence of mercury vapour in the discharge tube. It seems probable, therefore, that the method of producing the ionisation used in these experiments gives rise to spectral lines which do not occur in the ordinary vacuum tube, arc, or spark spectra of mercury.—An example of complex double integration: Dr. A. C. **Dixon**.

DUBLIN.

Royal Dublin Society, February 18.—Prof. Sydney Young, F.R.S., in the chair.—*Spongospora Solani*, Brunch.: Prof. T. **Johnson.** The author gave an account of a scab which he found last summer doing much harm to the potato crop along the west coast of Ireland. The scab is caused by *Spongospora Solani*, Brunch., a slime-fungus allied to Plasmodiophora. The author describes the germination of the spores, as well as the resting plasmodium, and concludes that Spongospora agrees in its mode of reproduction with Ceratiomyxa, as described by Jahn, not with the other Myxomycetes. The author had the opportunity, through the kindness of Colonel Prain, F.R.S., the director of the Royal Gardens, Kew, of examining the spore-balls of *Sorosporium scabies* (Berk.), Fisch. d. Wald., which agree with those of *Spongospora Solani*. He expresses the opinion that *S. scabies* may prove to be, not a member of Ustilaginaceæ, but identical with *Spongospora Solani*, a slime-fungus.—The radium content of deep-sea sediments: Prof. J. **Joly.** The paper is a record of experiments on material kindly supplied by Sir John Murray, F.R.S. The quantity of radium is found to increase with distance from land, the central Pacific oozes (Radiolarian ooze and Red Clay) rising above 50×10^{-12} grams radium per gram. Manganese nodules, Globigerina ooze, and Blue Mud were also examined. The Blue Mud is poorer in radium than many terrestrial sediments.

PARIS.

Academy of Sciences, March 2.—M. H. Becquerel in the chair.—Some phosphorescence spectra: Henri **Becquerel.** A comparison of the phosphorescent and flame spectra of various specimens of fluor-spar, apatite, and scheelite from different localities. The bands cannot be wholly attributed to the traces of rare earths present in these minerals.—Reversible photographs: G. **Lippmann** (see p. 452).—Machines for driving away hail: J. **Violle.** So far as can be settled by direct experiments, a single detonation is practically without effect on a storm cloud. The effects of volleys from a large number of hail cannon seem to be capricious; a violent storm is practically unaffected by them, but a slowly moving cloud approaching the district by a known path may be diverted successfully.—Lithium in active minerals: Sir William **Ramsay** and Alex. **Cameron.** Referring to the results of Prof. McCoy and of Mlle. Gleditsch on the presence of lithium in certain radio-active minerals, it is pointed out that lithium is not regarded as the sole product of change when copper salts are treated with the radium emanation; other members of the alkali group may also be produced (see NATURE, March 5, p. 412).—The direct hydrogenation of the aromatic quinones: Paul **Sabatier** and A. **Mailhe.** With reduced nickel at 100° C., quinone is converted nearly quantitatively into hydroquinone. At higher temperatures products of decomposition, phenol and benzene, are found. The reaction also applies to toluquinone, paraxyloquinone, and thymoquinone.—Surfaces with coincident lines of curvature: L. **Raffy.**—The case of reduction of the differential equations of the trajectory of an electrified corpuscle in a magnetic field: Carl **Störmer.**—Electrical measurement of small lengths: A. **Guillet.**—The voltaic arc working in an enclosed space limited by a thick wall: Adolphe **Minet.**—The heat of vaporisation of propionic acid: A. **Faucon.** This constant, measured with the Berthelot apparatus, was found to be 90·4. This gives a Trouton constant of 16·2, lower than the normal figure of 20 to 21. Formic and acetic acids show the same abnormality.—The determination of the atomic weight of europium: G. **Jantsch.** The purity of the europium preparation and its freedom from samarium and gadolinium was proved by superimposing the arc spectra of all three on the same plate. The only lines common to the three were the parasitic lines from the arc, belonging to iron, silicon, and magnesium in the carbon electrodes. The ratio $Eu_2(SO_4),8H_2O : Eu_2O_3$ was determined experimentally, and gave an atomic weight of 152 ($O=16$). This is in close agreement with the number previously found by MM. Urbain and Lacombe.—The oxidation of platinum: C. **Marie.** Evidence has been obtained that a minute amount of an oxide of platinum can be produced by the action of various oxidising agents at the ordinary temperature.—A new type of combination of sulphur with certain iodides: V. **Auger.** The preparation of the following compounds is described:—$CHI_3.3S_8$, $C_2D_4.4S_8$, $AsI_3.3S_8$, $SbI_3.3S_8$. All these are well crystallised, and have been analysed.—Syntheses by means of the mixed organometallic derivatives of zinc. Ketone alcohols: E. E. **Blaise** and I. **Herman.** The ketone alcohol $C_2H_5.CO.C(CH_3)_2.OH$ has been obtained by the action of $C_2H_5.Zn.I$ upon $CH_3.CO.O.C(CH_3)_2.COCl$, and subsequent saponification with cold dilute caustic soda solution.—The preparation and characters of crystallised *d*-talite: Gabriel **Bertrand** and P. **Bruneau.** A detailed description is given of the improvements in E. Fischer's method of preparing *d*-talite, by means of which, starting with galactonic acid, 7·5 per cent. of the re-crystallised substance is obtained instead of 1 per cent. of the carbohydrate in the form of syrup. The physical and chemical properties of the crystallised product are given.—Physico-chemical researches on soaps considered as colloids: André **Mayer,** Georges **Schaeffer,** and E. F. **Terroine.**—The sorting of minerals by the electromagnet: A. **Chevallier** and L. **Vérain.**—The application to thoria of a general method of synthesis of fluorides and silicates: A. **Duboin.**—The existence of cephalic glands in *Machilis maritima*: L. **Bruntz.**—A Lepidoptera (*Zeuzera pyrina*) causing damage to the cork tree in Algeria: P. **Lesne.**—Spectroscopic examination of the bile: A. **Auché.** The method is based on the production of a characteristic absorption spectrum by bilirubin when oxidised under certain conditions which are defined.—Some new work on kala-azar cultures: inoculation of the dog: etiology: Charles **Nicolle.**—The rocks and Permian strata at Châtillon-sur-Saône (Vosges): A. **Doby.**—The existence of a Permian fauna and flora at Madagascar: Marcellin **Boule.**—The infra-Lias of Hodna (Algeria): J. **Savornin.**

CALCUTTA.

Asiatic Society of Bengal, February 5.—Hindustani-English glossary of birds, chiefly from Jerdon: Lieut.-Colonel D. C. **Phillott** and Pandit Gobin Lal **Bonnerjee.**—Notes on the pollination of flowers in India. Note No. 5. Some autumn observations in the Sikkim Himalaya: I. H. **Burkill.** The observations were made above 7000 feet in the autumns of 1904 and 1906, on two journeys from Darjeeling along the Singlela ridge. The climate of the ridge is a very moist one, and an unusual percentage of flowers are pendent, possibly profiting thereby because their honey escapes dilution and their pollen injury from the rain. Bombi visit many of the flowers, even working in the rain, and are found at all elevations; a long-tongued Bombyliid fly of the genus Lycastris is frequent about 8000 feet to 9000 feet. The trees of the ridge are almost all spring-flowering, and the flowering plants of the autumn flora are almost all herbs.—Notes on the pollination of flowers in India. Note No. 6. The spring flora in the Simla Hills: I. H. **Burkill.** Observations made in the end of April and beginning of May, 1906 and 1907, are recorded. The flora and fauna are very European in character, but the flora is of a much more specialised type than is the spring flora of, for instance, the Grampians of Scotland. The weather in May is generally dry, and pendulous flowers are not very numerous.—Fat of the Himalayan bear: D. **Hooper.** Analysis of the fat of *Ursus torquatus* as used medicinally in the Himalaya.—Monograph of sea-snakes: Captain F. **Wall.** A full and illustrated account of the sea-snakes of the world based on study in several museums.—A note on the calm region in the atmosphere, which in the neighbourhood of Calcutta, during the cold season, is at a height of 3000 feet to 4000 feet: C. **Little.** The object of the note is to make known the existence of the calm region at almost a uniform height throughout any one cold season, as well as from year to year. The information has been collected by observing paper balloons of different sizes, some filled with coal gas and some with hydrogen, and brief details are given of the method of observation. The altitude and azimuth of the balloon were noted at intervals of two minutes, and at the same time the diameter of the image of the balloon in a 3-inch telescope of 42 inches focal length was measured by a micrometer. Assuming this last measurement to be x thousandths of an inch, the distance would be 126,000/x feet, the balloon being 3 feet in diameter. From these measurements the position of the object in space is determined, and consequently the air movements at the different levels to which the object rises, assuming the air movement to be horizontal. With a 3-feet balloon filled with hydrogen gas, or with one of 6 feet diameter filled with coal gas, the greatest elevation attained varies from 7000 feet to 10,000 feet. It has been found in all cases that up to 4000 feet the air movement is quite different from what it is above that level, and that in passing from the lower to the upper layer of air the balloon passes through one that has very little motion.

DIARY OF SOCIETIES.

THURSDAY, March 12.

Royal Society, at 4.30.—Description of the Brain of Mr. Charles Babbage, F.R.S.: Sir Victor Horsley, F.R.S.—The Origin and Destiny of Cholesterol in the Animal Organism. Part II., The Excretion of Cholesterol by the Dog: C. Dorée and J. A. Gardner.—On Reciprocal Innervation in Vaso-motor Reflexes and the Action of Strychnine and of Chloroform thereon: Dr. W. M. Bayliss, F.R.S.—Bacteria as Agents in the Oxidation of Amorphous Carbon: Prof. M. C. Potter—The Life-history of *Trypanosoma equiperdum*: Prof. J. E. Salvin-Moore and Anton Breinl.

Royal Institution, at 3.—Early British History and Epigraphy: Sir John Rhys.

Royal Society of Arts, at 4.30.—Progress in the Native States of India during the past Forty Years: Sir David W. K. Barr, K.C.S.I.

Mathematical Society, at 5.30.—On the Projective Geometry of some Covariants of a Binary Quintic: Prof. E. B. Elliott.—On the Inequalities connecting the Double and Repeated Upper and Lower Integrals of a Function of Two Variables: Dr W. H. Young.—On the Operational Expression of Taylor's Theorem: W. F. Sheppard.—On a Formula for the Sum of a Finite Number of Terms of the Hypergeometric Series when the Fourth Element is Unity (Second Paper): Prof. M. J. M. Hill.—Note on a Soluble Dynamical Problem: Prof. L. J. Rogers.

Institution of Electrical Engineers, at 8.—America Re-visited, 1907: Sir W. H. Preece, K.C.B., F.R.S.

FRIDAY, March 13.

Royal Astronomical Society, at 5.—Observations of the Transit of Mercury, 1907 November 14: T. F. Claxton—Photometric Measurements of Saturn, 1907 August–December: J. M. Baldwin.—Reappearance of Saturn's Ring, 1908 January: R. T. A. Innes.—On the Orbits of Σ 483, Σ 2438, Σ 3123, 8 Sextantis = A. C. 5, and Δ 15: T. J. J See.—On the Lunar Inequalities due to the Motion of the Ecliptic and the Figure of the Earth: E. W. Brown.—On the Variability of the Nucleus of the Planetary Nebula N.G.C. 7662: E. E. Barnard.—Measures of Southern Binary Stars in 1907: John Tebbutt.—Double Star Observations, 1902–1907: W. H. Maw.—Further Considerations on the Correlations of Stellar Characters: Winifred Gibson and Karl Pearson.—The Perturbations of Halley's Comet, 1759–1910: P. H. Cowell and A. C. D. Crommelin—*Probable Papers:* A Suggested Explanation of the Ancient Jewish Calendar Dates in the Aramaic Papyri, Translated by Prof. A. H. Sayce and Mr. A. E. Cowley: E. B. Knobel.—The Perturbations of Halley's Comet in the Past (Third Paper), the Period 1066–1301: P. H. Cowell and A. C. D. Crommelin—On the Relative Numbers of Star Images Photographed in Different Parts of the Plates for the Oxford Portion of the Astrographic Catalogue (Second Paper): H. H. Turner.—Note on the Discovery of a Moving Object near Jupiter (1901 C. J.): Royal Observatory, Greenwich.

Royal Institution, at 9.—Transatlantic Wireless Telegraphy: Chevalier G. Marconi.

Physical Society, at 8—On Certain Dynamical Analogues of Temperature Equilibrium: Prof. G. H. Bryan.—Experiments on Artificial Fulgurites: Miss D. D Butcher.—The Distribution in Electric Fields of the Active Deposits of Thorium and Actinium: S. Russ.

Malacological Society, at 8.—Descriptions of Two New Species of Synapterpes, Pils., and a New Species of South American Strophocheilus: Hugh C. Fulton.—Description of a New Species of Plectopylis: G. K. Gude.—On the Mollusca of some Holocene Deposits of the Thames River System: A. S. Kennard and B. B. Woodward.—Note on the Radula of *Pomatias elegans*: Rev. E. W. Bowell.—The Application of Poli's Generic Names: A. J. Jukes-Browne and J. H. Ponsonby.

SATURDAY, March 14.

Royal Institution, at 3.—Electric Discharges through Gases: Prof. J. J. Thomson, F.R.S.

MONDAY, March 16.

Royal Society of Arts, at 8.—Fuel and its Future: Prof. V. B. Lewes.

TUESDAY, March 17.

Royal Institution, at 3.—Membranes: Their Structure, Uses and Products: Prof. W. Stirling.

Royal Statistical Society, at 5.

Zoological Society, at 8.30.—Some Observations on the Effects of Pressure upon the Direction of Hair in Mammals: Dr. W. A. Kidd—The Rudd Exploration of S. Africa, IX. List of Mammals obtained by Mr. Grant on the Gorongoza Mountains, Portuguese S E. Africa: O. Thomas, F.R.S., and R. C. Wroughton.—Notes upon some Species and Geographical Races of Serows (Capricornis) and Gorals (Næmorhedus) based upon Specimens exhibited in the Society's Gardens: R. I. Pocock.

Mineralogical Society, at 8.—On the Occurrence of Minerals developed by Pneumatolitic Action in the Bodmin and Camelford Areas: G. Barrow and H. H. Thomas.—A Protractor for Use in Constructing Stereographic and Gnomonic Projections: A. Hutchinson.—Supplementary Notes on the Mineral Kaolinite: Allan B. Dick.—An Attachment to the Goniometer for the Measurement of Complex Lamellated Crystals: H. L. Bowman.

Institution of Civil Engineers, at 8.—*Further discussion:* The New York Rapid-transit Subway: W. B. Parsons.

WEDNESDAY, March 18.

Royal Microscopical Society, at 8.—Lord Avebury will deliver his Presidential Address, on Seeds, with Special Reference to British Plants.—*Exhibition:* Mounted Specimens of some of the Rarer Species of Freshwater Polyzoa: Mr. C. F. Rousselet.

Geological Society, at 8.—The Carboniferous Rocks at Loughskinny, (co. Dublin), with an Account of the Faunal Succession and Correlation: Dr. C. A. Matley and Dr. A. Vaughan.—A Note on the Petrology and Physiography of Western Liberia (West Coast of Africa): J. Parkinson.

Entomological Society, at 8.

THURSDAY, March 19.

Royal Society, at 4.30.—*Probable Papers*:—On Scandium: Sir William Crookes, F.R.S.—On Secondary β-Rays: Prof. J. A. McClelland.—On the Measurement of the Atmospheric Electric Potential Gradient and the Earth-air Current: C. T. R. Wilson, F.R.S.—Note on the Trajectories of Rifled Projectiles with Various Shapes of Head: A. Mallock, F.R.S.

Royal Institution, at 3.—Standardisation in Various Aspects: (1) Mechanical Engineering: Dr. R. T. Glazebrook, F.R.S.

Royal Society of Arts, at 8.—The Navigation of the Air: Dr. H. S. Hele-Shaw, F.R.S.

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